

**WHAT IS CLAIMED IS:**

1. A modular electronic assembly for integration with a pneumatic tire, the tire having an inner liner, the modular electronic assembly comprising:
  - a mounting patch adapted for fixed positioning on the inner liner of a pneumatic tire;
- 5       a power source at least partially embedded in said mounting patch; and
  - at least one electronic device supported by a substrate and configured to receive energy from said power source.
2. The assembly of claim 1, wherein said power source comprises at least one battery.
3. The assembly of claim 1, wherein said power source comprises a pair of batteries.
4. The assembly of claim 1, further comprising:
  - an adhesive layer bonding the substrate supporting said at least one electronic device to said mounting patch.
5. The assembly of claim 1, further comprising:
  - a hook and loop tape combination securing the substrate supporting said at least one electronic device to said mounting patch.
6. The assembly of claim 2, wherein said battery is provided with terminals affixed thereto and the terminals are configured such that the substrate securing said at least one electronic device is interconnected with and secured to said mounting patch by way of the terminals of said battery.
7. The assembly of claim 1, further comprising:
  - a plurality of flexible conductive elements electrically connecting said power source to said at least one electronic device.
8. The assembly of claim 6, wherein said plurality of flexible conductive elements are selected from the group consisting of springs, fatigue-resistant metals, and elastomers.
9. The assembly of claim 1, wherein said at least one electronic device is selected from the group consisting of a transducer, an acoustic device, a condition-responsive

device, a temperature sensor, a pressure sensor, a tire revolution counter, a vehicle speed sensor, a sidewall deflection sensor, a tire displacement sensor, a

5 microprocessor, a memory module, an RFID transponder, a GPS device, a flashing light assembly, and a data transmitter and/or receiver circuit.

10. A tire assembly with integrated electronic components for monitoring associated conditions thereof, said tire assembly comprising:

a pneumatic tire having an inner liner;

a support substrate;

5 at least one condition-responsive device mounted on said substrate and configured to provide output relative to changes with respect to at least one input condition associated with said pneumatic tire;

a modular patch carrying said support substrate and corresponding at least one condition-responsive device, said modular patch being mounted on the inner liner of

10 said pneumatic tire; and

a power source for supplying energy to said at least one condition-responsive device, wherein said power source is at least partially embedded in said modular patch.

11. The tire assembly of claim 10, wherein said power source comprises at least one battery.

12. The tire assembly of claim 11, further comprising an adhesive layer bonding said support substrate to said at least one battery.

13. The tire assembly of claim 10, wherein said power source comprises a pair of batteries.

14. The tire assembly of claim 10, further comprising:

an adhesive layer bonding said support substrate device to said patch.

15. The tire assembly of claim 10, further comprising:

a hook and loop tape combination securing said monitoring device to said patch.

16. The tire assembly of claim 11, wherein said at least one battery is provided with terminals affixed thereto and the terminals are configured such that said support

substrate device is secured to said patch by way of the terminals of said at least one battery.

17. The tire assembly of claim 10, further comprising:

a plurality of flexible conductive elements electrically connecting said power source to said at least one condition-responsive device.

18. The tire assembly of claim 16, wherein said plurality of flexible conductive elements are selected from the group consisting of springs, fatigue-resistant metals, and elastomers.

19. The tire assembly of claim 10, wherein said at least one condition-responsive  
5 device is selected from the group consisting of a sensor, a transducer, and an acoustic device.

20. The tire assembly of claim 19, further comprising a data transmitter couple to said at least one condition-responsive device for relating information from said tire assembly.